



## Exercise Biochemistry Review

---

Proceedings of IBEC 2018, Beijing, China, October 23-25  
PO-003

### Effect of C2C12 Myotubes Function after Electrical Stimulation at Different Time

Jun Zhao, Heling Dong  
Jinan university

**Objective** To study the effect of different time of electrical stimulation on C2C12 myotubes function, and further explore its molecular mechanism.

**Methods** An electrical stimulation was given 7 days after C2C12 myotubes differentiation, of which intensity was 30ms, 3Hz, and the stimulation time was 60mins, 120mins, and 180mins, respectively. A total of four experimental groups, including Con (control group), E60 (60 mins group), E120 and E180. Microscope was used to observe the muscular myotubes form; Kits were to detect MDA and ROS; Western blot was used to detect the expression of autophagy proteins and mechanism proteins, including PGC1, p-ULK, SIRT1 and SIRT3.

**Results** Compared with the control group, MDA, ROS, SIRT3 increased significantly in E60 ( $p < 0.05$ ), p-ULK and PGC1 increased significantly ( $p < 0.01$ ), SIRT1 decreased significantly ( $p < 0.05$ ). In E120, MDA, ROS, SIRT3 and PGC1 increased significantly ( $p < 0.01$ ), SOD decreased significantly ( $p < 0.05$ ). In E180, MDA and ROS increased significantly ( $p < 0.01$ ), SOD decreased significantly ( $p < 0.01$ ).

**Conclusions** Moderate electrical stimulation can significantly activate oxidative stress, and further promote SIRT3, PGC1 and p-ULK expression, while excessive stimulation has the opposite effects.